

REMARKS

Claims 1-13 are pending.

The abstract has been amended for clarity.

Claim 1 has been amended to recite that a hard-coat layer and an antireflection layer are laminated directly or indirectly on a substrate film. Support for this amendment can be found in paragraph [0092] as identified in the publication of the present application US2008/0095999. Claim 1 has also been amended to recite that the antireflection layer includes a low refractive index layer and a high refractive index layer in this order from the hard-coat layer. Support for this amendment can be found in paragraph [0099].

Claim 3 has been amended so as to further depend from claim 1.

New claim 9 finds support in paragraph [0060].

New claim 10 finds support in paragraphs [0127] and [0133].

New claims 11 and 12 find support in paragraphs [0063]-[0066]. Claim 11 recites the range of the ratio of R_3/R_2 of 0.99-1.00. This range finds support in the combination of the range of “0.99 or more” (as found in [0065] of the present specification) and the endpoint of “1.00” as found in Example 1.

New claim 13 finds support in paragraph [0067].

No new matter has been added by way of the above-amendment.

I. Specification

The Examiner objects to the Abstract for being too long. In response, Applicants have shortened the Abstract. Withdrawal of the objection is respectfully requested.

II. Prior Art Based Issues

II-A. Regarding the present invention

The present invention is drawn to a protective film for a polarizing plate (and method of producing the same) having features and/or properties which are neither taught (implicitly or

explicitly) nor fairly suggested in the cited references. The protective film for a polarizing plate according to the present invention has the following features (i) and (ii).

(i) Substrate film

The substrate film has a photoelastic coefficient of less than 9×10^{-12} Pa⁻¹ and a saturated water-absorbing percentage of less than 0.05%, and exhibits a warpage percentage of 1% or less when farmed into a film having an average thickness of 50 μ m and a dimension of 100 mm x 100 mm and allowed to stand at 60°C and a humidity of 95% for 500 hours.

(ii) Layer configuration

The hard-coat layer and the antireflection layer are laminated in this order on at least one surface of the substrate film formed of a resin material directly or via another layer, and the antireflection layer includes a low refractive index layer and a high refractive index layer in this order from the hard-coat layer.

The resulting protective film for a polarizing plate has an antireflection function, it exhibits excellent adhesion to a substrate, and it has excellent durability in view of the fact that the substrate film has the properties defined in (i) and in view of the fact that the layer configuration is as defined in (ii).

II-B. Issues Under 35 USC 102

II-B-i. JP '826

Claims 1-4 and 6-8 stand rejected under 35 U.S.C. 102(b) as being anticipated by Yuasa et al. (JP 2001-108826) (hereinafter JP '826). Applicants respectfully traverse the rejection.

JP '826 disclose a polarizer protective film in which an antireflective layer is formed on a substrate film having a photoelastic coefficient of 20×10^{-7} cm²/kgf or less, Paragraph 0024 of JP '826 discloses that the antireflective layer is obtained by combining a low refractive index layer and a high refractive index layer. However, JP '826 fails to disclose the order of lamination of the low refractive index layer and the high refractive index layer. In the examples of JP '826, the layers are formed in the order of hard-coat layer/TiO₂ layer/SiO₂ layer. Specifically, JP '826 fails to disclose the layer configuration (hard-coat layer/low refractive index layer/high refractive index layer) as presently claimed.

As the MPEP directs, all the claim limitations must be taught or suggested by the prior art to establish a *prima facie* case of anticipation. See MPEP § 2131. In view of the fact that the JP '826 fails to teach or fairly suggest the order of layers, a *prima facie* case of anticipation cannot be said to exist. Reconsideration and withdrawal of the rejection are respectfully requested.

II-B-ii. US '904

Claims 1-2 and 7-8 stand rejected under 35 U.S.C. 102(e) as being anticipated by Yamaoka et al. (U.S. 6,417,904) (hereinafter US '904). Applicants respectfully traverse the rejection.

US '904 discloses an optically compensatory film in which a birefringent phase retarder layer is adhesively supported on a transparent film base having a photoelastic coefficient of $30 \times 10^{-12} \text{ m}^2/\text{N}$ or less and a water absorption coefficient of 1.0% or less (at 23°C for 24 hours). However, US '904 fails to disclose the configuration of the antireflection layer of the present invention. US '904 only hints at the use of an antireflection layer at column 5, lines 7-16. However, there is no teaching or suggestion in US '904 to use an antireflection layer which includes a low refractive index layer and a high refractive index layer in this order from the hard-coat layer, as presently claimed. In view of the fact that the US '904 fails to teach or fairly suggest the inventive antireflection layer, a *prima facie* case of anticipation cannot be said to exist. Reconsideration and withdrawal of the rejection are respectfully requested.

II-C. Issues Under 35 U.S.C. 103(a)

Claim 5 stands rejected under 35 U.S.C. 103(a) as being obvious over JP '826 in view of Nakajima (JP 2000-336196) (hereinafter JP '196). Additionally, claims 3-6 stand rejected under 35 U.S.C. 103(a) as being obvious over US '904 in view of JP '196. Applicants respectfully traverse both obviousness rejections.

As mentioned above, according to the present invention, a protective film for a polarizing plate that has an antireflection function and exhibits excellent adhesion to a substrate and excellent durability is obtained by utilizing the substrate film having specific properties and the

layer configuration in which the hard-coat layer and the antireflection layer are laminated in this order on at least one surface of the substrate film directly or via another layer, and the antireflection layer includes a low refractive index layer and a high refractive index layer in this order from the hard-coat layer, as described above.

One of the advantages of the present invention is that the protective film for the polarizing plate of the present invention exhibits a remarkable improvement in interlaminer adhesion by forming a low refractive index layer (such as a SiO₂ layer) on the hard-coat layer. That is, the interlaminer adhesion between the hard-coat layer and the high refractive index layer (such as an ITO layer) can be improved remarkably by forming the low refractive index layer between the hard-coat layer and the high refractive index layer.

Moreover, the present inventors have surprisingly found that a protective film for a polarizing plate can be obtained having the above configuration (hard-coat layer/low refractive index layer/high refractive index layer) which is less susceptible to warpage, deformation, and distortion even when allowed to stand in an atmosphere of high temperature and high humidity for a long period of time as shown in table 1.

All of these features are not taught or fairly suggested by the cited references.

The patentable distinctions between the present invention and the teachings of JP '826 and US '904 as discussed above and are herein incorporated by reference. Applicants respectfully submit that JP '196 fails to cure the deficiencies of JP '826 and US '904.

JP '196 discloses a method of producing a multilayer film wherein at least one titanium oxide film is formed on a polymer film, of which the temperature is controlled at -10 to 150°C, using a plasma CVD apparatus. Claim 6 and the examples JP '196 discloses an antireflection film in which a silica film (low refractive index layer) which is formed on the surface of a polymer film on which a titanium oxide film (high refractive index layer) is formed.

Specifically, JP '196 discloses only the layer configuration formed of hard-coat layer/high refractive index layer/low refractive index layer, but fails to disclose the layer configuration (hard-coat layer/low refractive index layer/high refractive index layer) of the present invention. As the MPEP directs, all the claim limitations must be taught or suggested by

the prior art to establish a *prima facie* case of obviousness. See MPEP § 2143.03. In view of the fact that none of the cited references teach or fairly suggest the antireflection layer of the present invention, a *prima facie* case of obviousness cannot be said to exist. Reconsideration and withdrawal of the rejections are respectfully requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq., Reg. No. 43,575, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

Dated: October 19, 2009

By  #43575
Marc S. Weiner
Registration No.: 32,181
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

Attached: Abstract of the Disclosure (clean version)